

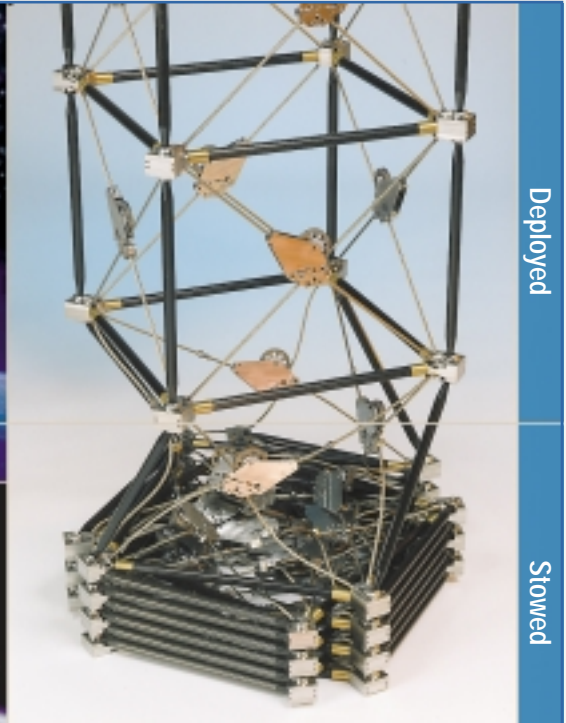
# ADAM Boom System



*Superior Deployed Stability for Precision Payload Support*



Shuttle Radar Topography Mission



Deployed



Stowed

## Performance Features

- Superior stiffness & stability of deployed payload elements
- Low risk, flight heritage mechanical system
- Excellent thermal & mechanical stability:  
10 nanometer stability performance for frequency responses > 50Hz (IPEX II flight validation)
- Very high deployment reliability (repeatability)
- Retraction capability
- Validated high strength & stiffness performance produced & flown:  
Lengths up to 60m (197 ft)  
Stiffness > 5E9 lb-in<sup>2</sup>  
Strength > 72,000 in-lb bending load capacity
- Enables precision payload deployed operation without active controls

## Application Benefits

- Tailorable deployed properties to match mission needs
- Compact, highly efficient stowage volume < 5% of deployed length
- Very repeatable precise deployment position
- Substantial cabling & utility accommodation



## Applications

Program	Customer	Technology	Application
IPEX II	JPL	ADAM	Micron-level Stability Flight Experiment
SRTM	JPL	ADAM	SAR Antenna Deployment
WSOA	JPL	ADAM & ESS	Deployable SAR, Fixed-Baseline Interferometer
AstroPhysics Programs	Various	ADAM	Occluder Deployment, Instrument & Detector Separation

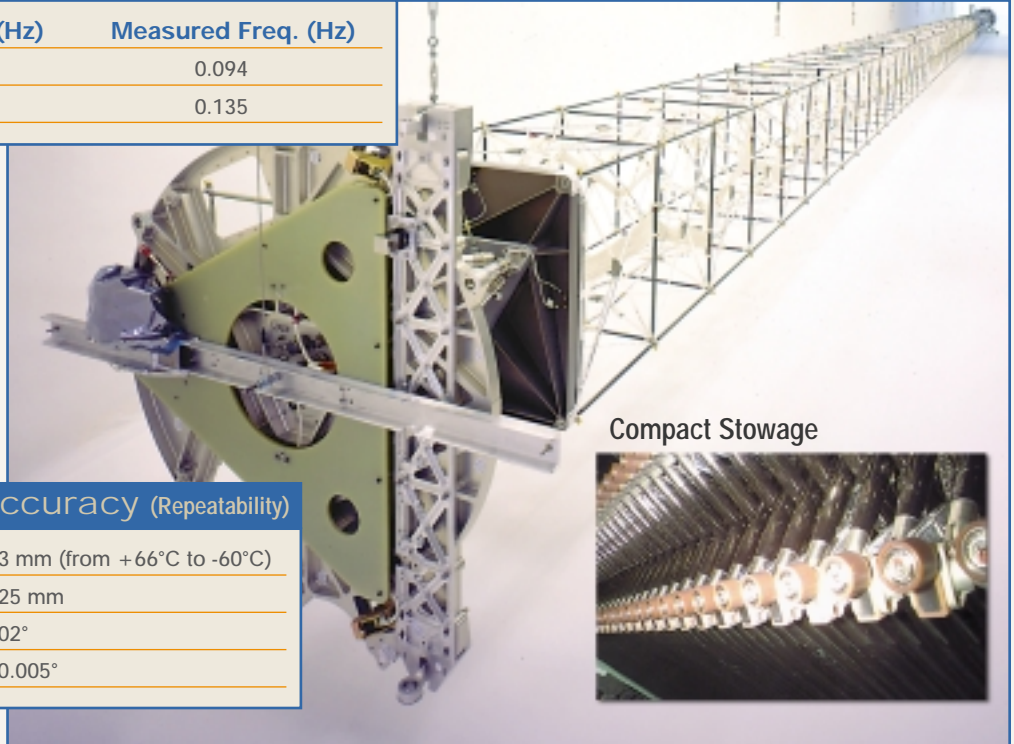
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## Verified 60m Analysis & Performance in Space

Mode	Predicted Freq. (Hz)	Measured Freq. (Hz)
First Yaw-Bending	0.095	0.094
First Roll-Bending	0.144	0.135



Compact Stowage



## Verified 60m Deployed Accuracy (Repeatability)

Length	< +/- 1.3 mm (from +66°C to -60°C)
Tip Translation in Shear	< +/- 0.25 mm
Tip Twist in Torsion	< +/- 0.02°
Tip Rotation in Bending	<< +/- 0.005°

## ADAM Design Guide: System Mass, Diameter & Canister Mass Fraction vs. Bending Stiffness for Various Deployed Lengths

